What Is Claimed Is:

1. A template for oligonucleotides synthesis comprising:

a Watson-Crick nucleotide region, having two ends;

a Hoogsteen nucleotide region, having two ends;

at least one linker region attaching at least one of said ends of said Watson-Crick nucleotide region and at least one of said ends of said Hoogsteen nucleotide region;

wherein, said Watson-Crick nucleotide region and said Hoogsteen nucleotide region are capable of forming a triplex with substrate nucleotides.

2. The template for oligonucleotide synthesis of claim 1, wherein said at least one linker region comprises two linker regions.

3. The template for oligonucleotide synthesis of claim 1, wherein said linker region is selected from the group consisting of an oligonucleotide, an oligopeptide, and a polyether.

4. The template for synthesis of oligonucleotides of claim 1 further comprising at least one primer.

5. The template for oligonucleotide synthesis claim 4, wherein said at least one primer comprises two primers.

6. The template for oligonucleotide synthesis of claim 4, wherein said at least one primer is covalently bound to said at least one linker region.

7. A method for synthesizing oligonucleotides comprising:

preparing a solution of substrate mononucleotides;

adding a circular polynucleotide template to said solution;

allowing said mononucleotide substrates and said circular polynucleotide template to form a triplex;

adding a reaction mixture to said solution, thereby causing the ligation of the mononucleotide substrates so as to form an oligonucleotide;

denaturing said triplex; and,

separating said oligonucleotide from said circular polynucleotide template.

8. The method of claim 7 further comprising adding a pH buffer to said solution.

9. The method of claim 7, wherein said reaction mixture comprises cyanogen bromide and a divalent metal salt.

10. The method of claim 9, wherein said divalent metal salt is selected from the group consisting of magnesium chloride, barium chloride, manganese chloride, nickel chloride, cobalt chloride, copper chloride, zinc chloride, calcium nitrate or calcium chloride.

11. The method of claim 9, wherein the concentration of said divalent metal salt is between 20 and 200 mM.

12. The method of claim 7 further comprising the step of increasing the temperature of said solution to greater than 10°C.

13. A method for synthesizing oligonucleotides comprising:

forming a solution of substrate nucleotides;

forming a solution of circular polynucleotide templates within a dialysis bag, wherein said dialysis bag allows difusion of olinucleotides but prevents difusion of circular templates;

immersing said dialysis bags in said solution of substrate nucleotides;

allowing triplex formation between said templates and said substrate nucleotides within said dialysis bags;

addition of the reaction mixture to said solution, thereby causing ligation of said substrate nucleotides to form an oligonucleotide;

denaturing said triplex, thereby dissociating said oligonucleotide from said template;

allowing said oligonucleotide to diffuse outside said dialysis bag; and

removing said dialysis bag from said solution.

14. The method of claim 13 further comprising raising the temperature of said substrate nucleotide solution to greater than 10°C.

15. The method of claim 13, wherein said substrate nucleotides is selected from the group consisting of mononucleotides, oligonucleotides, or polynucleotides.

16. The method of claim 13, wherein said reaction mixture is comprised of cyanogen bromide and a divalent metal salt.

17. The method of claim 16, wherein the concentration of said divalent metal salt is between 20 and 200 mM.

18. The method of claim 16, wherein said divalent metal salt is selected from the group consisting of magnesium chloride, barium chloride, manganese chloride, nickel chloride, cobalt chloride, copper chloride, zinc chloride, calcium nitrate or calcium chloride.